

## **CLAIMS**

- 1    1.     A method for synchronizing a first artifact and a second artifact, the first and  
2     second artifacts being interdependent and concurrently modified, the first and second  
3     artifacts each having a plurality of elements, the method comprising:
  - 4           generating a temporary artifact having all the elements of a last synchronized  
5           version of the first artifact and having all the elements of a latest version of the second  
6           artifact transformed as the first artifact;
  - 7           merging the temporary artifact and a latest version of the first artifact to create a  
8           synchronized version of the first artifact; and
  - 9           generating a synchronized version of the second artifact having all the elements of  
10          the latest version of the second artifact and having all the elements of the synchronized  
11          version of the first artifact transformed as the second artifact.
- 1    2.     The method of claim 1 wherein one of the first and second artifacts is a software  
2     model artifact and the other of the first and second artifacts is a code artifact.
- 1    3.     The method of claim 2 wherein the software model artifact is a UML file.
- 1    4.     The method of claim 2 wherein the code artifact is a 3GL source file.
- 1    5.     The method of claim 1 wherein the generating a temporary artifact comprises  
2     performing a reverse engineering operation to generate the temporary artifact.

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1       6.     The method of claim 1 wherein the generating a synchronized version of the  
2     second artifact comprises performing a forward engineering operation to generate the  
3     synchronized version of the second artifact.

1       7.     A computer program product for use with a computer system, the computer  
2     program product comprising a computer useable medium having embodied therein  
3     program code for processing a first and a second artifact each having a plurality of  
4     elements, the first and second artifacts being interdependent and concurrently modified,  
5     the program code comprising:

6                 program code for generating a temporary artifact having all the elements of a last  
7     synchronized version of the first artifact and having all the elements of a latest version of  
8     the second artifact transformed as the first artifact;

9                 program code for merging the temporary artifact and a latest version of the first  
10    artifact to create a synchronized version of the first artifact; and

11                 program code for generating a synchronized version of the second artifact having  
12     all the elements of the latest version of the second artifact and having all the elements of  
13     the synchronized version of the first artifact transformed as the second artifact.

1       8.     The computer program product of claim 7 wherein one of the first and second  
2     artifacts is a software model artifact and the other of the first and second artifacts is a  
3     code artifact.

1       9.     The computer program product of claim 7 wherein the program code for  
2     generating a temporary artifact comprises program code for performing a reverse  
3     engineering operation.

1       10.    The computer program product of claim 7 wherein the program code for  
2     generating a synchronized version of the second artifact comprises program code for  
3     performing a forward engineering operation.

1       11.    A computer data signal embodied in a carrier wave for use with a computer  
2     system, the computer data signal comprising program code for processing a first and a  
3     second artifact each having a plurality of elements, the first and second artifacts being  
4     interdependent and concurrently modified, the program code comprising:

5              program code for generating a temporary artifact having all the elements of a last  
6     synchronized version of the first artifact and having all the elements of a latest version of  
7     the second artifact transformed as the first artifact;

8              program code for merging the temporary artifact and a latest version of the first  
9     artifact to create a synchronized version of the first artifact; and

10          program code for generating a synchronized version of the second artifact having  
11     all the elements of the latest version of the second artifact and having all the elements of  
12     the synchronized version of the first artifact transformed as the second artifact.

1    12.    The computer data signal of claim 11 wherein one of the first and second artifacts  
2    is a software model artifact and the other of the first and second artifacts is a code  
3    artifact.

1    13.    The computer data signal of claim 11 wherein the program code for generating a  
2    temporary artifact comprises program code for performing a reverse engineering  
3    operation.

1    14.    The computer data signal of claim 11 wherein the program code for generating a  
2    synchronized version of the second artifact comprises program code for performing a  
3    forward engineering operation.

1    15.    An apparatus for synchronizing a first artifact and a second artifact, the first and  
2    second artifacts being interdependent and concurrently modified, the first and second  
3    artifacts each having a plurality of elements, the apparatus comprising:

4                means for generating a temporary artifact having all the elements of a last  
5    synchronized version of the first artifact and having all the elements of a latest version of  
6    the second artifact transformed as the first artifact;

7                means for merging the temporary artifact and a latest version of the first artifact to  
8    create a synchronized version of the first artifact; and

9           means for generating a synchronized version of the second artifact having all the  
10          elements of the latest version of the second artifact and having all the elements of the  
11          synchronized version of the first artifact transformed as the second artifact.

1       16.     The apparatus of claim 15 wherein one of the first and second artifacts is a  
2       software model artifact and the other of the first and second artifacts is a code artifact.

1       17.     The apparatus of claim 15 wherein the means for generating a temporary artifact  
2       comprises means for performing a reverse engineering operation.

1       18.     The apparatus of claim 15 wherein the means for generating a synchronized  
2       version of the second artifact comprises means for performing a forward engineering  
3       operation.